CONTAINER FOR DISCARDED SMOKING MATERIALS

BY

DAVID V. BOLAND

I hereby certify that this application is being filed by Express Mail EV214262735US with the United States Postal Service, in an envelope addressed to: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on this 24th day of June, 2003.

Lisa N. Benson

FIELD OF THE INVENTION

This invention relates to containers for discarded smoking materials, such as ashtrays.

BACKGROUND OF THE INVENTION

Objections to public smoking are increasing. Nonsmokers do not wish to be exposed to second-hand smoke, or the odor of extinguished cigarettes. One source of second-hand smoke is cigarettes and cigars that are only partially extinguished in ashtrays. Further, the smell of extinguished cigars and cigarettes is offensive to most people. As an increasing number of establishments prohibit, or discourage, smoking, a greater number of people smoke in automobiles, and subsequently discard the cigarette butt out of the window, to avoid the offensive odor of the cigarette butt in their car.

A need exists for a central depository for smoking materials that is conveniently positioned, such as in automobiles and near the entrance to such establishments. Specifically, there is a need for an ashtray that will receive smoking materials, and retard smoke from exiting the device, in the event that the cigar or cigarette is not fully extinguished. Preferably, the device will retain offensive odors within the device, and prevent discarded smoking materials from being seen or detected by olfactory senses. The device should provide means for easily removing cigarette butts and the like from the device. The device

should not be flammable, while at the same time, the device should assist in extinguishing burning materials.

SUMMARY OF THE INVENTION

The present invention is a container that has a disposable portion present within the container. The disposable receptacle, such as a suitably structured bag, is positioned within the container, and an air eliminator eliminates air from a space that is between the bag and the container, so that the bag is pulled against an interior of the container, thereby reducing the flammability, and increasing the puncture resistance, of the bag. The bag has a closure mechanism that prevents air from entering the bag, and that prevents smoke from escaping from the bag, after a burning object is placed within the bag.

DESCRIPTION OF THE DRAWINGS

Figure 1 is a perspective view of the ashtray.

Figure 2 is a sectioned view of the ashtray, taken essentially along line **2-2** of **Figure 1**.

Figure 3 is an exploded isolation of an embodiment of the closure mechanism.

Figure 4 is an isolation of the closure mechanism.

Figure 5 is an additional view of the closure mechanism.

Figure 6 is a sectioned view of the ashtray demonstrating a method of use of the ashtray.

Figure 7 is a sectioned view of the ashtray, demonstrating the method of use of the ashtray.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Figure 1 shows the ashtray with the disposable receptacle in the form of a bag **2** present within the container **4** that forms the ashtray. An opening is present in the upper portion of the bag.

As show in **Figure 2**, the bag extends from the upper opening of the container into a lower portion of the container. The upper portion of the container may be funnel shaped, so that an interior of the container has an hourglass shape. By way of further explanation, the uppermost part of the container has a wide opening for easy placement of objects within the bag and container. The upper portion of the container below the opening, as shown in this embodiment, has an inverse conically shaped void, which is to say that the upper portion of the interior void in the container is a funnel. This upper portion of the container receives and funnels the discarded object toward a center restriction within the opening of the container. The void in the container expands in a lower portion to provide adequate room for the reception of, and holding of, cigarette butts **5** and other discarded objects, and particularly burning or materials that are offensive to sight and smell.

The upper portion of the container is formed for easy deposit of a cigarette butt into the container, while the central portion of the container narrows for operation of the closure mechanism. The lower portion of the container is

enlarged from the central portion, so that there is adequate storage of cigarette butts and related materials.

The disposable bag is positioned within the container, and is shaped to conform generally to the interior contours of the container, as shown in **Figure 2**. The bag is preferred to be made of flame-retardant materials. Examples of flame-retardant materials are aluminum foil, plastic cooking bags and treated cotton paper or a layered combination of flame retardant materials, although this list is not exhaustive.

The container has a removable lower portion that provides access to the lower, receptacle portion of the container. This lower removable portion **6** may be removed and attached by threaded means, as shown in **Figure 2**.

As shown in **Figure 2**, the closure mechanism **8** applies pressure to a central portion of the bag that is below the upper portion of the bag, and above the lower portion of the bag. By applying pressure to the central portion of the bag, the bag is pinched shut.

As shown in **Figure 3**, the closure mechanism may be spring biased. A flame-retardant deformable conduit **10** is present within the closure mechanism. The deformable conduit is normally open when no pressure is applied to it, that is, a cigarette butt and related objects may be easily placed through the conduit. As shown in **Figure 4**, when the deformable conduit is placed within the closure mechanism, spring biasing **12** forces the closure mechanism to pinch the conduit closed. In the normal position, a spring forces the parts **14, 16** of the closure mechanism in opposite directions, so that a force is applied to the deformable

conduit, and the deformable conduit is maintained in the closed position. When manual pressure is applied to the ends of the closure mechanism, as shown in **Figure 5**, the pressure is relieved from the deformable conduit and the deformable conduit opens, allowing cigarette butts and related objects to pass through the deformable conduit and the central portion of the bag. As shown in **Figure 7**, manual pressure forces the sections of the closure mechanism toward each other, relieving pressure on the deformable conduit, and the deformable conduit is opened. A void in parts **14, 16,** and though which the conduit passes, are aligned as shown in **Figure 5,** and the conduit is reshaped by the void. Other devices that will close the central portion of the bag and prevent access to the lower receptacle portion of the bag may be used.

The device provides an air eliminator **18**, which is preferred to be a vacuum pump, and may be a manual vacuum pump as shown in **Figure 2**. A space **20** is present between the lower portion of the container and the lower portion of the bag, as shown in **Figure 6**, when the bag is initially placed into the container. The air eliminator is used to eliminate air that is present in the space, and pull the bag against the inner walls of the container. The bag is attached to the container, such as at the top of the container, in a manner that seals the space between the bag and that container. This seal prevents a material amount of air from being pulled into the space between the bag and the container by the air eliminator as it is actuated. An elastic band **22** may be used to retain the bag against the container as shown, which both retains the bag in position in the container, and prevents air from entering space between the bag and the

container at the upper portion thereof. Similarly, an O-ring **24** or similar seal is provided where the lower portion of the container is removably attached to the container, so that air is not pulled into the space **20** by the air eliminator.

In use, the bag is positioned within the container as shown in **Figure 6**. The elastic band is used to attach the bag at an upper portion thereof to an upper portion of the container **22**. The lower portion of the bag extends into the lower portion, or receptacle, of the container. The closure mechanism is actuated so as to open the conduit, so that the bag may be positioned through the conduit. The lower portion of the container may be unscrewed to assist in positioning the bag within the container.

After the bag is secured at an upper portion thereof to an upper portion of the container, and the lower portion of the container is securely threaded onto the upper portion of the container, the air eliminator is actuated by pressing the air eliminator to actuate the pump. The air eliminator pulls air that is trapped between the bag and the inner walls of the container. By pulling the bag against the inner walls of the container, the bag becomes increasingly flame and puncture resistant. It is well known that when certain relatively thin sheets of material, such as textiles, are tightly pulled against another object, the resistance to burning is increased, as compared to air being present on both sides of the object. Pulling the bag against the container by the air eliminator expands the bag to increase its capacity, but more importantly, this process enhances the flame retardant and puncture resistant properties of the bag.

After the bag is in position, the closure mechanism may be actuated to open the conduit, allowing cigarette butts and related materials to be placed within the device. The large, funnel shaped opening allows cigarette butts to enter the bag, and to be funneled through the closure mechanism. After cigarette butts are placed into the device and are allowed to fall into the lower receptacle portion of the container, the closure mechanism is released, and the normal position of the closure device forces the conduit to close, which in turn prevents ingress to the lower portion of the bag. In the event that the cigarette butt is still burning, the closure mechanism prevents additional air from facilitating combustion, and also prevents smoke from escaping from the device. Smells that are associated with cigarettes are also held within the container by the closures mechanism.

After the disposable bag has reached a desired capacity of discarded cigarette butts and related materials, the bag may be removed and replaced. The lower portion of the container is unscrewed, and the elastic band is released from the upper portion of the bag. The closure mechanism is opened. Th bag may then be easily pulled out of the container through the opening formed by the removal of the lower portion of the container. The bag can be easily and cl anly discarded and a new bag can be installed.

In one embodiment, the container is designed to fit in an existing cup holder in most cars. The cup holder may be designed for other indoor/outdoor applications and according to the specification herein.